



Hidden Revenue: Pipeline Management Software

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SUMMARY

Pipeline Management Software, a series of words that when strung together sound expensive and complex. In general pipelines are expensive to build and maintain and when things do go wrong the costs can skyrocket. So for many companies, the thought of adding more IT costs to the bottom line isn't appealing, no matter how necessary the function of leak detection. However, high tech is now a reality in almost every industry and pipelines are no exception. And, although leak detection is the most talked about feature from newer pipeline software systems, the benefits extend far beyond that concept. At Energy Solutions we've used actual customer data and industry information to demonstrate the cash positive benefits of Pipeline Management Software.

In recent years, the Master Limited Partnership (MLP) company model is increasingly popular. Correspondingly there has been a greater emphasis placed on a pipeline company's ability to generate cash and continually grow investor distributions by about 5 to 7 percent year over year. The pipeline assets are bought and sold and consolidation of those assets under fewer companies becomes the norm. At that point it is increasingly difficult to get the same cash growth from those assets and pipeline owners look to make larger and larger acquisitions to meet the expectations. Add to this the fact that as companies compete for these assets the prices naturally get driven up cutting even more into the potential profits. An industry response has been to focus on internal growth opportunities in the form of capital projects; but these take longer for gains to be realized.

SOFTWARE FOR THE BOTTOM LINE

This is where the hidden benefits of Pipeline Management Software come into play. Substantial revenue and cash growth can be unlocked from existing assets through technology aided operational improvements. Standardizing systems across the assets can and has been proven to increase pipeline throughput, lower energy consumption, and minimize Environmental, Health & Safety (EHS) costs. These improvements are achievable with the latest generation of pipeline management software, which provides a host of analytical tools for managing pipelines and lowering risk.

No longer the to-cheap/easy-to-be-true applications of questionable accuracy or the too-complex-if-you're-not-a-rocket-scientist tools; today's generation of integrated pipeline management products, like those offered by Energy Solutions, consist of intuitive, easy to use, Windows based systems that are comparatively affordable and much easier to maintain. With the productization of pipeline software systems the products are now easier, quicker and cheaper to install. In the case of a product like PipelineManager® they are more flexible with capabilities added on in a modular fashion as the analytical and decision support needs of a company evolve. The tools are integrated to leverage the strengths of multiple applications that work in different environments. By combining the capabilities of engineering and planning, control room and commercial systems; engineers, operators and marketers alike can better coordinate their specific demands and constraints for the overall benefit of the bottom line.

Pipeline management software can positively impact economic performance in a number of ways. Accurate pipeline modeling and simulation enables pipeline companies to increase revenue by increasing throughput, and to reduce operating expenses by cutting energy consumption and reduce losses associated with product value degradation. These benefits have a large bottom line effect because they can all be achieved without additional capital investment and with little additional expense. Next, we will look at a few examples.

INCREASING THROUGHPUT AND MINIMIZING ENERGY CONSUMPTION IN A GAS PIPELINE

Without adding more lines to an existing gas pipeline one way to general a better return is to increase the throughput of the gas through the existing line or to reduce the consumption of energy on that line, or both. This is exactly what one Energy Solutions customer was able to achieve.

Through the use of a simulation technology based on real-time data operators can run scenarios that will pinpoint areas of improvement such as compressors that may not need to be used at certain times. They are then able to keep the rate of flow the same while reducing the energy necessary to move the gas. In addition, they can simulate increased line pack to anticipate how much more gas the line can take to ensure that they are moving the maximum amount of gas through the lines at the same rate of energy consumption. This excess capacity can be sold to customers to generate additional revenue without capital investment and at little to no expense. The net effect is an increase in the return on existing assets and additional cash generation. Also, energy cost savings are often passed onto customers thereby increasing the competitiveness of the pipeline.

THE PROOF IS IN THE NUMBERS

Actual results have shown that through advanced modeling and simulation software, compressor optimization and better line pack management has enabled 2% to 4% capacity gains. For a gas pipeline with an original design capacity of 2,000 MMcf/d, compression and line pack optimization freed 40 MMcf/d to 80 MMcf/d of gas which could be reapplied to capacity sales. 40 MMcf/d to 80 MMcf/d of gas at a pricing of \$0.50/Mcf for ½ a year results in \$3.7 million to \$7.3 million in additional revenue.

When compared to and depending on the initial cost of the software and ongoing maintenance, the return on investment can reach to above 500%.

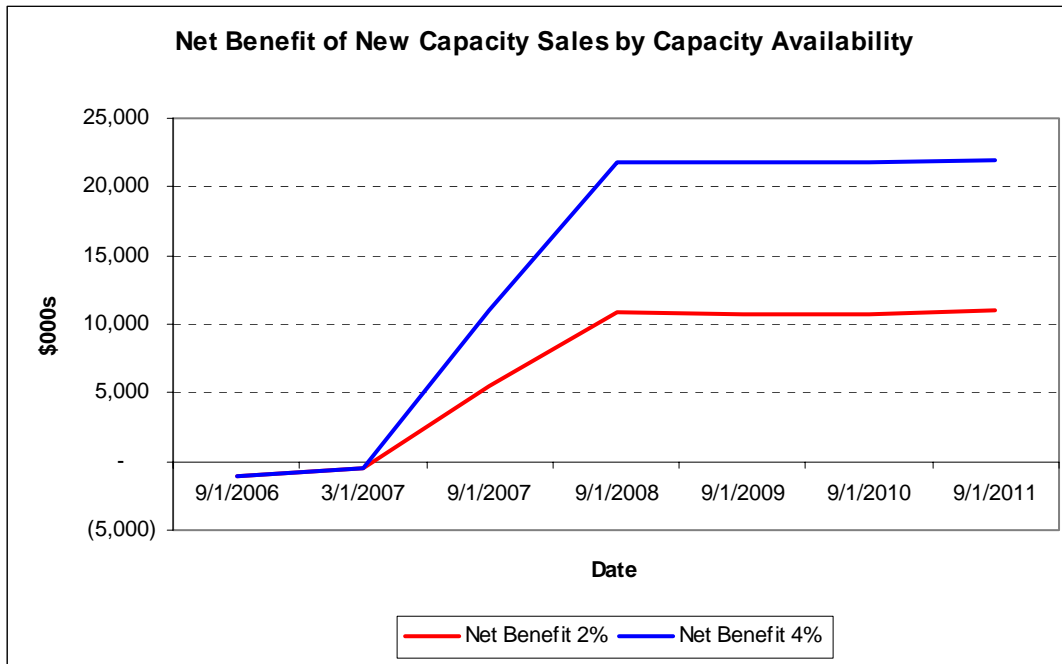


Figure 1: Revenue Generated from a 2% and 4% Added Capacity Example

	Jan 2007	Apr 2007	Jan 2008	Jan 2009	Jan 2010	Jan 2011	Jan 2012	Total
Software and Services	(1,050)	(450)	---	(75)	(150)	(150)	---	(1,875)
2% Additional Capacity Sold			5,475	10,950	10,950	10,950	10,950	49,275
Net Cash Flow	(1,050)	(450)	5,475	10,875	10,875	10,875	10,875	47,400
ROI	514%							
Software and Services	(1,050)	(450)	---	(75)	(150)	(150)	---	(1,875)
4% Additional Capacity Sold			10,950	21,900	21,900	21,900	21,900	98,550
Net Cash Flow	(1,050)	(450)	10,950	21,825	21,825	21,825	21,825	96,675
ROI	1,005%							

DECREASING PRODUCT VALUE DEGRADATION IN LIQUID PIPELINE

In a liquids pipeline, the interface between product batches often lowers the value of a portion of the batches because the affected volumes no longer meet product specifications. To reduce losses from product degradation, a products pipeline can model its assets and its supply requirements to schedule products more efficiently. Software such as PipelineTransporter® that automates and coordinates multiple scheduling processes between feeder, main, and downstream lines simultaneously enables quick schedule development and modification, elimination of costly scheduling errors, and reduction of product value loss during transport.

Through advanced scheduling software, product value degradation can be reduced by as much as 5%. For a products pipeline with a delivery capacity of 100,000 bbl/d carrying premium, unleaded, diesel and jet fuel (5%, 50%, 35%, and 10% by volume and priced \$2.29, \$2.15, \$2.15 and \$2.13, respectively) and 1.5% product degradation by volume, the pipeline can save nearly \$700,000 per year.

When compared to and depending on the initial cost of the software and ongoing maintenance, the return on investment can be as much as 64%.

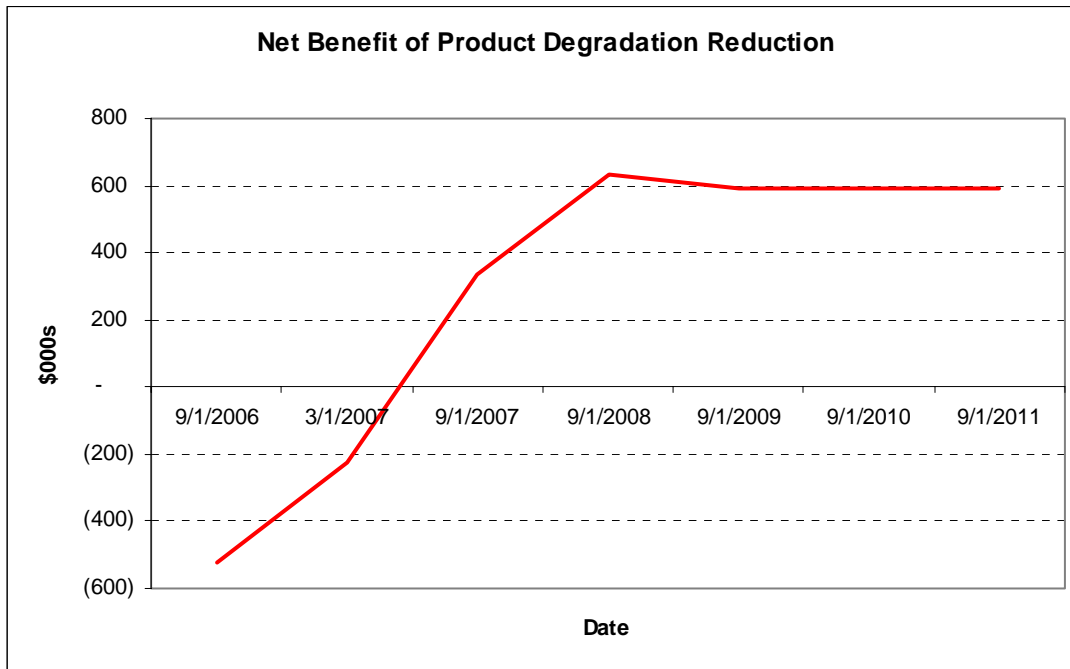


Figure 2: Revenue Generated from Lowering Product Degradation

	Jan 2007	Apr 2007	Jan 2008	Jan 2009	Jan 2010	Jan 2011	Jan 2012	Total
Software and Services	(525)	(225)	---	(38)	(75)	(75)	---	1,013
Product Degradation Savings	---	---	334	669	669	669	669	3,009
Net Cash Flow	(525)	(225)	334	631	594	594	594	1,997
ROI	64%							

CONCLUSIONS

Pipeline management software has come a long way in recent years from home grown specialty applications into integrated suites of products that connect engineering and planning with operations with commercial functions. In addition to functionality scope improvements, software products now present solutions to some of the pipeline industry's toughest financial, operating, and regulatory challenges. And it does so in a low risk and high return manner. Today's software is affordable, quick to implement, and provides pipeline companies with investment returns that far exceed the required rates of return for acquisitions or for capital expenditures. In this highly competitive pipeline market where every advantage counts, pipeline management software is an important performance improvement driver that passes all of the critical investment tests. The necessity of leak detection combined with the revenue benefits of asset optimization is putting pipeline companies in a win-win situation.